

File

February 10, 1919.

The Director,
National Park Service,
Department of the Interior,
Washington, D. C.

Sir:

I have the honor to submit my report of conditions
in the park for the month of January, 1919:

GENERAL STATEMENT.

The Yellowstone National Park was set aside by
Act of Congress March 1, 1872, (Secs. 2474 and 2475, R. S.,
17 Stat., 32) as a pleasuring-ground for the benefit and
enjoyment of the people, and placed under the exclusive con-
trol of the Secretary of the Interior, who was authorized
to make such rules and regulations as he deems necessary
for the care and maintenance of the park. It is situated
principally in northwestern Wyoming, but laps over a little
more than two miles into Montana on the north, and about
two miles into Montana and Idaho on the west. Its dimensions
are about 62 miles north and south, and about 34 miles east
and west, giving an area of about 3,348 square miles, or
2,142,720 acres. Its altitude is 6,000 to 11,000 feet.

The park was governed by civilian superintendents,
assisted by a few scouts, from the time it was set aside
until August 10, 1886, when, under authority contained in
the Sundry Civil Bill, approved March 3, 1883, at the request
of the Secretary of the Interior, the Secretary of War de-
tailed troops of United States Cavalry to protect it, the
commanding officer acting as park superintendent under the
direct orders of the Secretary of the Interior. On October
16, 1916, by mutual agreement of the heads of the Interior
and War Departments, the troops were withdrawn from the park
and their work of patrolling and protecting the park was again
taken over by civilians selected for the purpose by the
Secretary of the Interior. A clause contained in the Sundry
Civil Bill, approved June 12, 1917, (Public No. 21, 65th
Congress) made it obligatory to use troops for patrolling
the park, and they were returned by the War Department on

June 26, 1917, relieving the park superintendent of so much of the duties as pertained to "protection". The Sundry Civil Bill, approved July 1, 1918, again made provisions for the employment of a force of civilian rangers to protect the park, and a force of twenty-five rangers was organized and took over this work at the end of the 1918 tourist season.

The post of Fort Yellowstone was for the second time formally abandoned at midnight November 1, 1918, and all buildings and improvements passed to the control of the Secretary of the Interior. (See letter dated December 25, 1918, signed by Benedict Crowell, Assistant Secretary of War, to the Secretary of the Interior.)

The act of Congress which appropriated funds for protection of the park, also placed the appropriations for maintenance and improvement under the Secretary of the Interior, instead of under the Secretary of War, as heretofore, and permitted the combining of all work under this office.

The local office of the U. S. Weather Bureau, Department of Agriculture, is in charge of Mr. G. E. Lawton, Observer. Temperature and precipitation records are also made by the rangers at several of the stations, for the Weather Bureau.

The United States Department of Justice is represented by Mr. John W. Meldrum, United States Commissioner, who is authorized to try all violators of park rules, regulations or laws.

Park Headquarters for all departments and most of the concessioners, is located at Mammoth Hot Springs. A Telephone System connects Headquarters with sub-stations. A hydro-electric power plant furnishes the light for buildings and grounds at Headquarters. Water, electric current, and telephone service are furnished other departments of the Government in the park by the National Park Service, without charge. During January the hydro-electric power plant was run daily from 4.00 p. m. until noon, and was continued during the afternoon when any necessity existed for so doing.

CONDITIONS FOR THE MONTH OF JANUARY.

The mean temperature was 22.2, which was 4.6 above normal. There have been but four warmer Januaries during the past thirty-three years, viz: 1896, 1900, 1903, and 1904. The total precipitation according to the weather reports was 0.86 inches of water, which is 1.36 inches less than normal amount for January. But 1.6 inches of snow remained on the ground at the end of January. The sunshine record was considerably above the normal. A copy of the Monthly Meteorological Report is inclosed herewith.

EMPLOYEES.

The following-named regular employees were carried on the pay rolls during the month of January.

- 1 Chief Clerk (Acting Superintendent)
- 1 Purchasing Clerk and Special Disbursing Agent.
- 4 Clerks
- 1 Clerk, 14 to 31.
- 1 Civil Engineer, 1 to 20.
- 1 Assistant Engineer
- 1 Electrician
- 4 Assistant Chief Rangers
- 6 First-class park rangers
- 14 Park Rangers
- 1 Park Ranger, 14 to 31.
- 1 Park Ranger, 25 to 31.
- 2 Linemen
- 1 Plumber
- 2 Telephone Switchboard Operators
- 3 Foremen
- 1 Handyman
- 1 Laborer; 1 Watchman, 14 to 31.

In addition to these two assistant electricians were employed, temporarily, to assist in operating the power plant, pending certification of eligibles for appointment by the Civil Service Commission, and several carpenters, gas-enginemmen, chauffeurs, etc., were hired under the same conditions, to keep up the work of construction and maintenance at Headquarters and on the Gardiner Slide road, and construction of powder houses in the park near Gardiner.

Distribution of Park Rangers.

Assistant Chief Ranger James McBride (Acting Chief Ranger) was at Headquarters and made trips to the north line stations and to the Buffalo Farm.

Assistant Chief Ranger James P. Brooks had general charge of the districts covered by Bechler, Snake River, Lake, Canyon, and Sylvan Pass Stations. He made inspections of these stations and, with Rangers Wisdom and Massanovich, he patrolled to Upper Yellowstone, thence along to Moran, via Atlantic and Pacific Creek, and to Snake River and Bechler Stations and surrounding country.

Assistant Chief Ranger Charles J. Smith was stationed at Headquarters, in charge of the Chief Ranger's Office, while Acting Chief Ranger McBride did the outside work. He also made several patrols to the north entrance with motorcycle.

Assistant Chief Ranger Harry Trischman made patrols from Headquarters.

First-class Park Ranger B. C. Lacombe was stationed in charge at the buffalo farm, and had one laborer there to assist him in caring for the buffalo herd. He also made patrols in that section to Slough Creek and Specimen Ridge, in the vicinity of the buffalo farm.

First-class Park Ranger Court R. Dowling was stationed at Gardiner, and made a specialty of hunting and trapping carnivorous animals from Sepulcher Mountain to Blacktail. He caught nine coyotes during the month.

First-class Park Ranger Peter Lawson was in charge of Gallatin Station in the northwest corner of the park and, assisted by Ranger Douglas, kept that district thoroughly patrolled.

First-class Park Ranger Thad O. Pound was in charge of Gardiner Station throughout the month, and did some road patrolling with motorcycle in that vicinity. He was assisted by Rangers Dowling and McLaughlin, who did most of the patrolling in the District.

First-class Park Ranger Henry Anderson was in charge of Soda Butte Station and patrolled that District with the assistance of Ranger Howard. In addition to patrolling, they made a specialty of hunting coyotes in their own District, and as far west as Blacktail Deer Creek in the Tower Falls District. He also did a few days' work outside of the park, north of Gardiner, noting condition of elk leaving the park.

First-class Park Ranger Robt Roy Wisdom was in charge of Lake Station, and assisted by Ranger Mazzanovich, was charged with patrolling the Sylvan Pass, Canyon, and Thumb Districts. January 2 to 10 they made a long patrol to Upper Yellowstone in the southeast corner of the park, and January 15 to 17 made a special patrol to Pelican Creek.

Park Ranger Ford Parry was in charge of Riverside Station, where he was assisted by Park Ranger Fred J. Townsend. They patrolled that district and made one trip to Fountain or Lower Geyser Basin during the month.

Park Ranger H. F. Cushman was in charge of Morris Station, and patrolled from there alone. He reports game very scarce, which is the usual condition there in winter.

Park Ranger James H. Duggis was in charge of Grevice Station, where he was regularly assisted by Ranger Roy T. Frazier. Most of their patrolling was done on foot. In addition to patrolling the district, they made a few patrols in the vicinity of Jardine.

Park Ranger Frank J. Wiggins was in charge of Bechler Station, where he was assisted by Ranger James Russell in patrolling that district.

Park Ranger J. W. Eline was in charge of Snake River Station, where he was assisted by Ranger W. H. Purdue. He reports 46 inches of snow at the south entrance.

Park Ranger George Winn was in charge of Tower Falls Station, and since January 14 has been assisted by Ranger C. B. Kelly

Park Ranger William Wiggins has worked from Headquarters since he was taken up for duty, on January 25.

The other park rangers were stationed as follows: Joseph Douglas at Gallatin Station; Roy T. Frazier at Grevice Station; A. L. McLaughlin at Gardiner Station; Laurence Mansumvick at Lake Station; William S. Howard at Soda Butte Station; James Russell at Bechler Station; F. J. Townsend at Riverside Station, and C. E. Kelly at Tower Falls Station.

Hunter Steve Elkins worked from Gardiner to Soda Butte, with his trained lion dogs, and succeeded in capturing or killing 3 mountain lions during the month.

Hunter Robert Harkness worked every day from Headquarters, with a line of traps, and succeeded in capturing two coyotes during the month.

Under the direction of Assistant Chief Ranger Brooks, the rangers stationed at Lake, Snake River, and Bechler, have maintained a most effective system of patrols, covering the south end of the park much more thoroughly and frequently than it has ever been covered before. The few trappers operating outside along the south line under special State permit, are very careful not to encroach on park territory.

Other permanent employees were on duty at Headquarters, maintaining office and storehouse, shops, telephone lines, power plant, buildings, water and sewer systems, etc.; and others were engaged in engineering, improvement and changing buildings at Headquarters, construction, etc., under Civil Engineer Goodwin.

From January 6 to 12 our ice crop was harvested at Headquarters for summer use, most of the work being done by regular employees. 237 tons were put up.

Surveyor Joseph E. Zahner occupied quarters and was subsisted at our general mess at Headquarters during the month of January. He was engaged in engineering work in connection with other parks.

The following indefinite furloughs were authorized by the First Assistant Secretary, under date of January 4, 1919, effective the date shown opposite:

W. H. Ferrell,	Foreman,	November 18, 1918.
F. E. Huse,	"	" 22, 1918.
Deate T. White,	"	December 3, 1918.
Chas. W. Knochs,	"	" 20, 1918.

Also the following, authorized January 27, 1919,
by the First Assistant Secretary:

John A. Evans, Overseer, January 1, 1919.

Leaves of absence: The following leaves of absence
were granted during the month of January, 1919:

Lineman Hans Larsen, regular annual leave from
noon, January 1, to noon, January 2; $\frac{1}{2}$ day.

Handyman C. A. Brant, regular annual leave from
January 4 to 8; 4 days.

Foreman William J. O'Laughlin, regular annual
leave from January 7 to 9; 3 days.

Clerk W. H. Pondell, regular annual leave from
noon, January 20, to noon, January 22; 2 days.

Clerk L. M. MacRae, regular annual leave from
January 1 to January 31; 26 days.

Appointments: The following appointments were
made during the month of January, 1919; Chauncey M. Sweeney,
electrician, \$100 per month, effective January 1, 1919.

Clarence O. Lauer, Watchman, \$100 per month,
effective January 14.

Chester B. Kelly, Park Ranger, \$100 per month,
effective January 14.

William Wiggins, Park Ranger, \$100 per month,
effective January 25.

Vacancies: The following vacancies existed in
our regular force at the end of January, 1919:

- 1 Chief Park Ranger; 5 Park Rangers;
- 1 Assistant Electrician at \$1200 per annum.
- 1 Buffalo Keeper at \$1200 per annum.
- 1 Assistant Buffalo Keeper at \$900 per annum.

During January employees of the Service on duty in Yellowstone Park purchased War Savings Stamps to the amount of \$49.44.

ANIMALS, DOMESTIC.

All surplus saddle and draft animals were on winter pasture and were fed hay when it was needed. Saddle horses were kept up for use by rangers at Gardiner, Tower Falls, and Soda Butte Stations, and at Headquarters. A 4-horse team, was kept up at Headquarters for use in handling hay to feed game was not needed.

GRAZING.

There is plenty of winter grazing, easily accessible, in all parts of the park, and all wild animals are getting plenty of food and are in good condition.

Hone of the hay bought last fall for feeding deer, antelope, mountain sheep, and elk, has been fed, and but little has been fed to tame buffalo.

FOREST FIRES.

No fires occurred during the month. Special care is taken at Headquarters to prevent the starting of fires in buildings. A night watchman has been employed since January 14, and makes hourly patrols from 11.00 p. m. to 6.00 a. m.

FISH.

Considerable fishing was done in Gardiner and Madison Rivers by local parties, with fairly good success.

MAINTENANCE AND IMPROVEMENT.

Aside from the work being done under contract, building a road around the Gardiner Slide, and the remodeling of buildings at Headquarters, and building of storage houses for powder, under direction of Mr. Goodwin, but little improvement work was done.

The electricians were engaged in operating the power plant; the linemen kept the telephone lines in repair, and worked on repair of equipment; and the plumber made

repairs to the plumbing when frozen, turned off water when houses were vacated by employees and turned it on again when the houses were reoccupied. In addition these employees did considerable work in connection with repairs and maintenance of physical improvements, under direction of Mr. Goodwin, - in fact, the plumber spent most of his time on this work.

Civil Engineer Goodwin has furnished me with the following notes on work accomplished in the park in the way of improvements and construction under his direction during the month of January:

In general during the month the work consisted of repairing transportation and other equipment and putting it in shape for next season's work; repairing and remodeling buildings at Headquarters, consisting of changing one double set of officers' quarters into a four flat building, and changing one of the stone stables into a machine shop building, and other miscellaneous work.

During the month two temporary storage buildings were built for the storage of 400 tons of explosives. These were completed except for the protection stockade, which will have to be constructed next summer when the ground is not frozen.

General office and engineering work was carried on, and also the inspection and oversight of the contract work being done on the road in the Gardiner Canyon. The contractors, Gibbons & Reed Company, continued their work under their contract approved November 4, for the construction of a road through the Gardiner Canyon. At this season of the year the weather was very favorable for concrete work on the walls, and was carried on, intermittently, throughout the month. They also had a force employed on excavation throughout the greater portion of the month, and some work was done on laying dry rock walls. The force averaged approximately 40 men and 4 teams. The quantities allotted in the estimate for the month consisted of 575.6 cubic yards of class one excavation; 442.3 cubic yards of class two excavation; 2,464.8 class 3 excavation; 49.7 cubic yards of class two wet excavation; 248.4 cubic yards of concrete placed in revetment walls, and 62 cubic yards of loose laid rock wall.

The work accomplished this month brings the excavation quantities up to about 25 per cent of the probable totals; the reinforced concrete for revetment walls up to 90 per cent, and the loose laid rock walls up to 20 percent.

On a monetary value the payments indicate that the contract is about one-third completed. As a matter of fact, incidental work which they have done and cannot be allowed in the estimate, makes the work somewhat over 50 percent completed, and they should, with good weather and no unforeseen obstacles, be able to finish within the contract time.

MONIES TRANSMITTED.

The usual report of monies collected, due, transmitted, etc., together with money orders, checks, etc., totalling \$124.50, as called for in the reports on Forms 10-59 and 10-60, are inclosed. Please acknowledge receipt.

attention

In this connection/is invited to the inclosed check of the Yellowstone Park Transportation Company, covering its electric light bill for December, which is "PAID UNDER PROTEST." A copy of my letter to Miss Bushnell, the Assistant Treasurer of the Company, dated January 16, 1919, inclosed herewith, explains the reason why this bill was "paid under protest". So far as I know the Company has taken no steps to have the machinery tested or overhauled.

NATURAL PHENOMENA.

No changes were noted in the natural phenomena of the park during the month of January.

TRAVEL CONDITIONS.

No visitors registered at any park entrance during the month. The roads were much easier to travel than usual in January. A team and sleigh came from the western entrance to Headquarters January 14 without difficulty. A truck went to Tower Falls and return on January 15.

VISITORS.

Special visitors were recorded as follows:

Mr. Ernest W. Shaw, Supervisor Absaroka National Forest, and Mr. Mosier, of his office, on January 30.

COMPLAINTS.

No complaints were received during the month of January.

WILD ANIMALS.

The conditions for wild animals in the park remained as nearly perfect as they could be in winter. Forage is very plentiful and procured easily, as the snow is soft and shallow. Elk, deer, mountain sheep, and antelope were therefore considerably scattered and but few of them left the park on the north and west. Ranger Anderson reports about 3,500 elk and 111 mountain sheep seen and 7 elk killed by wolves, balance in good condition. Ranger Dewing reports having seen about 4,000 elk and 225 antelope. One antelope killed by wolves or coyotes. The rangers at Crevice Station report about 3,000 elk in that district. One young blacktail doe was drowned in the reservoir at Headquarters where ice had been cut on January 23, and one died from old age during the month.

Moose. The rangers at Lake Station saw 67 moose in January on their patrols to Upper Yellowstone and Pelican Creek. Those at Riverside saw tracks where ten had left the park and returned a day or two later. Signs of moose were reported from other sections.

Bears. No bears were seen during the month.

Wolves and coyotes: No wolves were killed during the month, though signs of them were found at different points along the north line. Forty-two coyotes were killed during the month, also ~~36~~ mountain lions. In compliance with your instructions, dated January 10, 1919, 36 coyote skins, representing the January catch, were shipped to Funston Bros., St. Louis on February 5, for sale to credit of park funds. Return on January shipment has not yet been received.

Mountain lions: Steve Elkins was employed throughout the month with his trained dogs, and succeeded in capturing and killing 3 lions in all.

Buffalo: Rangers Wisdom and Mazzanovich of Lake Station saw 55 buffalo of the wild herd in Pelican Valley, and report them very wild, as usual, and in excellent condition.

One 3-year-old bull, from the tame herd, was shipped by express, collect, to W. A. Johnson, at Mexico, Mo., on January 30 at his expense. Total shipping weight, including crate, was \$1,750 pounds.

The tame herd of buffalo has been permitted to range over several miles of territory in the vicinity of the buffalo farm and was not taken up as the weather has been mild and natural feed plentiful. This method saves hay and with the present size of the herd it is a difficult matter to hold them in good weather.

Since taking over the herd on the death of Mr. Frasier, Ranger Lacombe has been unable to locate all of the buffalo although he has made strenuous efforts to do so. On January 25 it was reported that there were three buffalo dead along the road near the Lamar Canyon. A day or two later several more dead ones were found on Slough Creek. Ranger Anderson reported that several dead ones seen by him on Slough Creek were bloated and had the appearance to him of animals that had died from eating frozen slough grass, but from the description given to me I was pretty well convinced that the disease known as hemorrhagic septicemia, which broke out in the herd in December, 1911, was responsible.

On January 29 I telegraphed you requesting that the Bureau of Animal Industry be asked to send a veterinarian, Dr. Swaney preferable, to make an investigation. In the meantime the herd was carefully watched and animals that showed any signs of being unwell were isolated. On February 3 Dr. I. Wallman of the Bureau of Animal Industry arrived, and on the following day visited the buffalo farm where he made a post mortem of four of the dead buffalo and took specimens which were sent to the Pathological Division of the Bureau of Animal Industry, Washington, D. C., for examination. Doubtless the result of this examination will

determine definitely the cause of death of these animals. Such examination as was possible here indicates strongly that hemorrhagic septicemia is present. A special report was made on this case on February 6. Thirty-two animals are known to have died. Acting Chief Ranger McBride, assisted by Ranger Lacombe and other rangers from Tower Falls and Soda Butte Stations, is carrying out Dr. Wallman's instructions with regard to taking all possible precaution at the buffalo farm to prevent further spread of the disease, and is also making strenuous efforts to locate the other buffalo, which are missing from the herd. All carcasses are destroyed by burning.

PROTECTION AND CARE OF GAME.

The beautiful weather and fine condition of the range has made it unnecessary for the elk to leave the park in search of food, and the rangers at Gallatin Station report that but a few hundred have left to the usual winter range down West Gallatin River and that many are seen inside of the park. Reports indicate that possibly 2,000 have left down Yellowstone Valley and are seen as far north as Bailey Mountain. These have been well guarded, however, by the U. S. Forest Service, which has several extra rangers employed to protect them.

I went over the situation with Mr. Ernest W. Shaw, Supervisor of the Absaroka National Forest, when he called at my office on January 30, and shall furnish two rangers to assist in this special work outside the park as soon as they can be spared from the extra work for which they are now needed at the buffalo farm.

A clipping from the LIVINGSTON ENTERPRISE, January 19, 1919, relative to the present protection of the elk outside of the park, is inclosed.

SANITATION AND DISEASE.

No sanitary work was done during the month, except the removal of ashes, waste, etc., from the buildings at Headquarters.

ACCIDENTS, DEATHS, ETC.

On January 4 Blacksmith W. J. O'Laughlin got a piece of emery wheel in his eye, and was taken to Chico Hot Springs on January 6 and had it removed.

ARRESTS AND VIOLATIONS OF THE LAW.

No arrests were made during the month. Three elk were killed outside of the park near the mining camp at Jardine, evidently for meat. Our ranger in charge of Gravel Station reported finding one dead just inside the line on January 17, but the fact that the meat had been taken and that it was discovered the same day as were those near Jardine, leads me to believe that it was shot outside and reached the park line before dying.

Inclosed herewith is copy of Circular No. 20, January 15, 1919, giving instructions for watchman. Since February 3 he has also been required to keep up two fires which are maintained in the stone building which is being remodeled from U. S. Cavalry stables to garage, in order to keep concrete warm while drying, and to attend to the furnace at the bachelor quarters between 4.00 and 5.00 a. m. and leave it in good condition when he goes off duty at 6.00 a. m.

Our general mess was moved to the bachelor quarters on January 24, from the small building just back of our office, where it has been heretofore maintained.

- There is also inclosed copy of Circular No. 21, January 27, 1919, General Instructions to all Employees.

U. S. Commissioner John W. Meldrum left the park on January 21 for a leave of absence.

Mesdames Anna K. Fryer and Elizabeth Trischman left the park on January 17 to spend the balance of the winter in Los Angeles, California.

Mr. Charles A. Brant, employed as a handyman, and Miss Bessie M. Griffin, who was formerly employed as stenographer, but resigned at the close of January 3, were married on January 4.

Mr. Ray Sherman, employed as a gas-engineeman (now

laborer) was married on January 6.

The flag was carried at half-mast on account of the death of Ex-President Roosevelt from January 7 to January 20, when the halyard broke and it went to the top of the pole. We have been unable to get it down since.

Moving picture shows have been held weekly for the general amusement of residents at Headquarters.

PROPOSED WORK FOR FEBRUARY.

Continued construction and repair of improvements under Civil Engineer Goodwin, under contract in Gardiner Canyon, and by the day on buildings at Headquarters.

Maintenance and repair of buildings, water and sewer systems, power plant and telephone lines.

Special care of animals, including feeding them if it becomes necessary, and patrols for poachers from all stations.

Very respectfully,

CHESTER A. LINDSLEY

Acting Superintendent.

Inclosures:

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

E OF THE SUPERINTENDENT

CIRCULAR NO. 29.

January 15, 1919.

INSTRUCTIONS FOR WATCHMAN.

Object: Care and protection from fire and theft of property and buildings.

The watchman will be on duty daily from 11.00 p. m. until 6.00 a. m. The patrol will be made as marked in red lines on the attached map. The red dotted lines can be used in place of one of the solid lines between the same points at the discretion of the watchman. The red circles indicate points (5 in number) where different keys are located. The watchman will carry a clock, and will be expected to punch it at each station once every hour in rotation, beginning with station 1. The locations of these keys are: the Superintendent's Office; Garage, at west end of the grounds; Stone stable remodeled into new garage; Hospital, and Building No. 1 (Old Guard House.)

Special attention will be given by the watchman to buildings not occupied at night, in which fires are maintained during the day, particularly the garages, shops, post exchange, and bowling alley.

Any suspicious characters will be required to give satisfactory account of themselves. Anything out of the ordinary will be reported.

The watchman will familiarize himself with the fire organization and instructions, location of extinguishers, etc.

PROCEDURE IN CASE FIRE IS DISCOVERED.

First. Put it out, if possible, with the means at hand.

Second. If it is necessary to give an alarm, immediately awaken Operator Schalts, who will give a general alarm by telephone.

Third. Give general alarm by ringing the triangle near the tennis court.

The clock will be kept in charge by Mr. Hill, who will keep it wound and ready for use and who will have charge of the record discs. An explanation in writing will be submitted to the Superintendent for approval, should the watchman fail

to secure records from each of the five keys each hour
between 11.00 p. m. and 6.00 a. m.

CHESTER A. LINDSLEY,

Acting Superintendent.

U. S. DEPARTMENT OF AGRICULTURE.
WEATHER BUREAU.

Weather Conditions--- Mammoth Hot Springs.

January, 1919.

Temperature: Monthly mean, 22.2°. Departure, 4.6° above normal. The mean temperature for this month was exceeded in Januaries of 1896, 1900, 1903, and 1914; January, 1896, with a mean of 26° is the highest on record for the period of 33 years.

Precipitation: Total, 0.88 inch. Departure, -1.36 inch. Precipitation occurred on 13 days and was well distributed throughout the month. The highest of record was 6.70 inches in 1890; lowest, 0.25 inch in 1905.

Snowfall: Total, 10.0 inches. The greatest amount on the ground was 4.2 inches on the 4th, and only 1.6 inch remained on the ground at the end of the month.

Wind: The total for the month was near normal, with an average hourly velocity of 9.0 miles. Maximum velocity of 40 miles per hour, from the south, occurred on the 16th.

Sunshine: Percentage of sunshine, 54, which is decidedly above the normal.

G. E. Lawton,

Observer.

Yellowstone Park, Wyo.
February 5, 1919.

MONTHLY METEOROLOGICAL SUMMARY.

ion, **Yellowstone Park, Wyo.**; month, **January**, 1919.

TEMPERATURE (Degrees Fahrenheit.)			Precipitation. (In inches and hundredths.)	Character of day.	Sun- shine per cent of possible.	ATMOSPHERIC PRESSURE. (Reduced to sea level; inches and hundredths.)	
Max.	Min.	Mean.				Mean.	
7	-5	1	.09	Cloudy	0	Mean 30.30	lowest 29.58, date 23"
11	4	8	.17	Cloudy	0		
20	10	15	.11	Cloudy	6		
29	16	22	.04	Pt. cldy	74		
26	15	20	0	Clear	100		
22	8	15	.01	Cloudy	8		
29	3	16	0	Clear	100		
28	7	18	0	Clear	100		
37	8	22	0	Clear	100		
36	12	24	0	Pt. cldy	23		
37	18	28	.05	Pt. cldy	58		
29	18	24	0	Pt. cldy	43		
28	10	19	0	Clear	100		
27	4	16	0	Clear	100		
29	12	20	0	Cloudy	0		
32	16	24	.04	Cloudy	0		
38	31	34	.06	Cloudy	0		
38	26	32	.02	Pt. cldy	61		
40	18	29	.0	Pt. cldy	58		
36	27	32	T	Cloudy	1		
31	20	26	.01	Cloudy	20		
35	26	30	.09	Cloudy	0		
40	24	32	.18	Pt. cldy	50		
28	11	20	0	Pt. cldy	78		
32	11	22	0	Clear	100		
31	17	24	.01	Cloudy	15		
29	9	19	0	Pt. cldy	74		
38	12	25	0	Clear	100		
38	9	24	0	Clear	100		
39	6	22	0	Clear	100		
38	11	24	0	Clear	94		
30.9	13.4	22.2	0.88	Total.	54		

NOTE.—"T" indicates trace of precipitation.

Autumn frosts not recorded after the occurrence of "killing," except in Florida and along the immediate coast of the Gulf of Mexico.

G. E. Lawton,

Weather Bureau.